



SEQUENCE LISTING

<110> BEELEY, NIGEL R. A.  
PRICKETT, KATHRYN S.

<120> NOVEL EXENDIN AGONIST COMPOUNDS

<130> 18528.016 (238/086 US)

<140> 09/554,533

<141> 1998-11-13

<150> PCT/US98/24210

<151> 1998-11-13

<150> 60/065,442

<151> 1997-11-14

<160> 87

<170> PatentIn version 3.2

<210> 1

<211> 39

<212> PRT

<213> Heloderma horridum

<220>

<223> C-term amidated

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His Ser Asp Gly Thr Phe Thr Ser Asp Leu Ser Lys Gln Met Glu Glu  
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Glu Ala Val Arg Leu Phe Ile Glu Trp Leu Lys Asn Gly Gly Pro Ser  
20 25 30

Ser Gly Ala Pro Pro Pro Ser  
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<211> 39

<212> PRT

<213> Heloderma suspectum

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<223> C-term amidated

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His Gly Glu Gly Thr Phe Thr Ser Asp Leu Ser Lys Gln Met Glu Glu

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Glu	Ala	Val	Arg
	20		
Leu	Phe	Ile	Glu
			25
Trp	Leu	Lys	Asn
			30
Gly	Gly	Pro	Ser
Ser	Gly	Ala	Pro
	35	Pro	Ser

<210> 3  
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 <213> Homo sapien

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 <223> C-term amidated

<400> 3															
His	Ala	Glu	Gly	Thr	Phe	Thr	Ser	Asp	Val	Ser	Ser	Tyr	Leu	Glu	Gly
1				5					10					15	

Gln	Ala	Ala	Lys	Glu	Phe	Ile	Ala	Trp	Leu	Val	Lys	Gly	Arg
			20					25					30

<210> 4  
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 <213> Artificial Sequence

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 <223> His, Arg or Tyr

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 <223> Ser, Gly, Ala or Thr

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 <223> Ala, Asp, or Glu

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 <223> Ala or Thr

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<223> Asp or Glu

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<223> Ala or Lys

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<223> Ala or Gln

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<223> Ala or Glu

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<222> (21)

<223> Ala or Leu

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<223> Phe, Tyr, or naphthylalanine

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<223> Ile, Val, Leu, pentylglycine, tert-butylglycine,  
or Met

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<223> Ala, Glu, or Asp

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N-alkylglycine, N-alkylpentylglycine,  
N-alkylalanine, or not present

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N-alkylglycine, N-alkylpentylglycine,  
N-alkylalanine, or not present

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N-alkylalanine, or not present

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<223> Pro, homoproline, 3Hyp, 4Hyp, thioproline,  
N-alkylglycine, N-alkylpentylglycine,  
N-alkylalanine, or not present

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Xaa Ala Xaa Xaa Xaa Xaa Xaa Xaa Xaa Xaa Xaa Xaa Xaa Xaa Xaa Xaa  
20 25 30

Xaa Xaa Xaa Xaa Xaa Xaa  
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<220>

<223> Description of Artificial Sequence: Synthetic peptide

<220>

<223> May be c-term amidated

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His Gly Glu Gly Thr Phe Thr Ser Asp Leu Ser Lys Gln Met Glu Glu  
1 5 10 15

Glu Ala Val Arg Leu Phe Ile Glu Trp Leu Lys Asn Gly Gly  
20 25 30

<210> 6

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<212> PRT

<213> Artificial Sequence

<220>

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His Gly Glu Gly Thr Phe Thr Ser Asp Leu Ser Lys Gln Met Glu Glu  
1 5 10 15

Glu Ala Val Arg Leu Ala Ile Glu Phe Leu Lys Asn  
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<210> 7

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<212> PRT

<213> Artificial Sequence

<220>

<223> Description of Artificial Sequence: Synthetic peptide

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<223> May be c-term amidated

<400> 7

His Gly Glu Gly Thr Phe Thr Ser Asp Leu Ser Lys Gln Leu Glu Glu  
1 5 10 15

Glu Ala Val Arg Leu Ala Ile Glu Phe Leu Lys Asn  
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<210> 8

<211> 28

<212> PRT

<213> Artificial Sequence

<220>

<223> Description of Artificial Sequence: Synthetic peptide

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<223> May be c-term amidated

<400> 8

His Ala Glu Gly Thr Phe Thr Ser Asp Leu Ser Lys Gln Leu Glu Glu  
1 5 10 15

Glu Ala Val Arg Leu Phe Ile Glu Phe Leu Lys Asn  
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<210> 9

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<212> PRT

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<223> Description of Artificial Sequence: Synthetic peptide

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<223> May be c-term amidated

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His Gly Glu Gly Ala Phe Thr Ser Asp Leu Ser Lys Gln Leu Glu Glu  
1 5 10 15

Glu Ala Val Arg Leu Phe Ile Glu Phe Leu Lys Asn  
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<210> 10

<211> 28

<212> PRT

<213> Artificial Sequence

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<223> Description of Artificial Sequence: Synthetic peptide

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<223> May be c-term amidated

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His Gly Glu Gly Thr Ala Thr Ser Asp Leu Ser Lys Gln Leu Glu Glu  
1 5 10 15

Glu Ala Val Arg Leu Phe Ile Glu Phe Leu Lys Asn  
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<210> 11

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<223> Description of Artificial Sequence: Synthetic peptide

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<223> May be c-term amidated

<400> 11

His Gly Glu Gly Thr Phe Thr Ala Asp Leu Ser Lys Gln Leu Glu Glu  
1 5 10 15

Glu Ala Val Arg Leu Phe Ile Glu Phe Leu Lys Asn  
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<400> 12  
His Gly Glu Gly Thr Phe Thr Ser Asp Ala Ser Lys Gln Leu Glu Glu  
1 5 10 15

Glu Ala Val Arg Leu Phe Ile Glu Phe Leu Lys Asn  
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<220>  
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His Gly Glu Gly Thr Phe Thr Ser Asp Leu Ala Lys Gln Leu Glu Glu  
1 5 10 15

Glu Ala Val Arg Leu Phe Ile Glu Phe Leu Lys Asn  
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1 5 10 15

Glu Ala Val Arg Leu Phe Ile Glu Phe Leu Lys Asn  
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His Gly Glu Gly Thr Phe Thr Ser Asp Leu Ser Lys Ala Leu Glu Glu  
1 5 10 15

Glu Ala Val Arg Leu Phe Ile Glu Phe Leu Lys Asn  
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His Gly Glu Gly Thr Phe Thr Ser Asp Leu Ser Lys Gln Ala Glu Glu  
1 5 10 15

Glu Ala Val Arg Leu Phe Ile Glu Phe Leu Lys Asn  
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His Gly Glu Gly Thr Phe Thr Ser Asp Leu Ser Lys Gln Leu Ala Glu

1 5 10 15  
Glu Ala Val Arg Leu Phe Ile Glu Phe Leu Lys Asn  
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<400> 18  
His Gly Glu Gly Thr Phe Thr Ser Asp Leu Ser Lys Gln Leu Glu Ala  
1 5 10 15

Glu Ala Val Arg Leu Phe Ile Glu Phe Leu Lys Asn  
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<400> 19  
His Gly Glu Gly Thr Phe Thr Ser Asp Leu Ser Lys Gln Leu Glu Glu  
1 5 10 15

Ala Ala Val Arg Leu Phe Ile Glu Phe Leu Lys Asn  
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<223> May be c-term amidated

<400> 20

His Gly Glu Gly Thr Phe Thr Ser Asp Leu Ser Lys Gln Leu Glu Glu  
1 5 10 15

Glu Ala Ala Arg Leu Phe Ile Glu Phe Leu Lys Asn  
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<223> May be c-term amidated

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His Gly Glu Gly Thr Phe Thr Ser Asp Leu Ser Lys Gln Leu Glu Glu  
1 5 10 15

Glu Ala Val Ala Leu Phe Ile Glu Phe Leu Lys Asn  
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1 5 10 15

Glu Ala Val Arg Ala Phe Ile Glu Phe Leu Lys Asn  
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<210> 23

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<223> May be c-term amidated

<400> 23

His Gly Glu Gly Thr Phe Thr Ser Asp Leu Ser Lys Gln Leu Glu Glu  
1 5 10 15

Glu Ala Val Arg Leu Phe Ile Ala Phe Leu Lys Asn  
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<210> 24

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<400> 24

His Gly Glu Gly Thr Phe Thr Ser Asp Leu Ser Lys Gln Leu Glu Glu  
1 5 10 15

Glu Ala Val Arg Leu Phe Ile Glu Ala Leu Lys Asn  
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<210> 25

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<223> May be c-term amidated

<400> 25

His Gly Glu Gly Thr Phe Thr Ser Asp Leu Ser Lys Gln Leu Glu Glu  
1 5 10 15

Glu Ala Val Arg Leu Phe Ile Glu Phe Ala Lys Asn  
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<212> PRT  
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1 5 10 15  
Glu Ala Val Arg Leu Phe Ile Glu Phe Leu Ala Asn  
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<223> Description of Artificial Sequence: Synthetic peptide

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<223> May be c-term amidated

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His Gly Glu Gly Thr Phe Thr Ser Asp Leu Ser Lys Gln Leu Glu Glu  
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Glu Ala Val Arg Leu Phe Ile Glu Phe Leu Lys Ala  
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Glu Ala Val Arg Leu Phe Ile Glu Trp Leu Lys Asn Gly Gly Pro Ser

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25

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Ser Gly Ala Pro Pro Pro  
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<210> 29

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<223> May be c-term amidated

<400> 29

His Gly Glu Gly Thr Phe Thr Ser Asp Leu Ser Lys Gln Leu Glu Glu  
1 5 10 15

Glu Ala Val Arg Leu Phe Ile Glu Phe Leu Lys Asn Gly Gly Pro Ser  
20 25 30

Ser Gly Ala Pro Pro Pro  
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<210> 30

<211> 37

<212> PRT

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<223> May be c-term amidated

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His Gly Glu Gly Thr Phe Thr Ser Asp Leu Ser Lys Gln Met Glu Glu  
1 5 10 15

Glu Ala Val Arg Leu Phe Ile Glu Trp Leu Lys Asn Gly Gly Pro Ser  
20 25 30

Ser Gly Ala Pro Pro  
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<210> 31

<211> 37

<212> PRT

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<223> Description of Artificial Sequence: Synthetic peptide

<220>

<223> May be c-term amidated

<400> 31

His Gly Glu Gly Thr Phe Thr Ser Asp Leu Ser Lys Gln Leu Glu Glu  
1 5 10 15

Glu Ala Val Arg Leu Phe Ile Glu Phe Leu Lys Asn Gly Gly Pro Ser  
20 25 30

Ser Gly Ala Pro Pro  
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<210> 32

<211> 36

<212> PRT

<213> Artificial Sequence

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<220>

<223> May be c-term amidated

<400> 32

His Gly Glu Gly Thr Phe Thr Ser Asp Leu Ser Lys Gln Met Glu Glu  
1 5 10 15

Glu Ala Val Arg Leu Phe Ile Glu Trp Leu Lys Asn Gly Gly Pro Ser  
20 25 30

Ser Gly Ala Pro  
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<210> 33

<211> 36

<212> PRT

<213> Artificial Sequence

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<223> Description of Artificial Sequence: Synthetic peptide

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<223> May be c-term amidated

<400> 33



His Gly Glu Gly Thr Phe Thr Ser Asp Leu Ser Lys Gln Leu Glu Glu  
1 5 10 15

Glu Ala Val Arg Leu Phe Ile Glu Phe Leu Lys Asn Gly Gly Pro Ser  
20 25 30

Ser Gly Ala Pro  
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<210> 34

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<212> PRT

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<223> May be c-term amidated

<400> 34

His Gly Glu Gly Thr Phe Thr Ser Asp Leu Ser Lys Gln Met Glu Glu  
1 5 10 15

Glu Ala Val Arg Leu Phe Ile Glu Trp Leu Lys Asn Gly Gly Pro Ser  
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Ser Gly Ala  
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<210> 35

<211> 35

<212> PRT

<213> Artificial Sequence

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<223> Description of Artificial Sequence: Synthetic peptide

<220>

<223> May be c-term amidated

<400> 35

His Gly Glu Gly Thr Phe Thr Ser Asp Leu Ser Lys Gln Leu Glu Glu  
1 5 10 15

Glu Ala Val Arg Leu Phe Ile Glu Phe Leu Lys Asn Gly Gly Pro Ser  
20 25 30

Ser Gly Ala  
35

<210> 36  
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<212> PRT  
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<220>  
<223> Description of Artificial Sequence: Synthetic peptide

<220>  
<223> May be c-term amidated

<400> 36  
His Gly Glu Gly Thr Phe Thr Ser Asp Leu Ser Lys Gln Met Glu Glu  
1 5 10 15  
Glu Ala Val Arg Leu Phe Ile Glu Trp Leu Lys Asn Gly Gly Pro Ser  
20 25 30  
Ser Gly

<210> 37  
<211> 34  
<212> PRT  
<213> Artificial Sequence

<220>  
<223> Description of Artificial Sequence: Synthetic peptide

<220>  
<223> May be c-term amidated

<400> 37  
His Gly Glu Gly Thr Phe Thr Ser Asp Leu Ser Lys Gln Leu Glu Glu  
1 5 10 15  
Glu Ala Val Arg Leu Phe Ile Glu Phe Leu Lys Asn Gly Gly Pro Ser  
20 25 30  
Ser Gly

<210> 38  
<211> 33  
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<220>  
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<220>

<223> May be c-term amidated

<400> 38

His Gly Glu Gly Thr Phe Thr Ser Asp Leu Ser Lys Gln Met Glu Glu  
1 5 10 15

Glu Ala Val Arg Leu Phe Ile Glu Trp Leu Lys Asn Gly Gly Pro Ser  
20 25 30

Ser

<210> 39

<211> 33

<212> PRT

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<223> May be c-term amidated

<400> 39

His Gly Glu Gly Thr Phe Thr Ser Asp Leu Ser Lys Gln Leu Glu Glu  
1 5 10 15

Glu Ala Val Arg Leu Phe Ile Glu Phe Leu Lys Asn Gly Gly Pro Ser  
20 25 30

Ser

<210> 40

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<220>

<223> May be c-term amidated

<400> 40

His Gly Glu Gly Thr Phe Thr Ser Asp Leu Ser Lys Gln Met Glu Glu  
1 5 10 15

Glu Ala Val Arg Leu Phe Ile Glu Trp Leu Lys Asn Gly Gly Pro Ser  
20 25 30

<210> 41  
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<220>  
<223> Description of Artificial Sequence: Synthetic peptide

<220>  
<223> May be c-term amidated

<400> 41  
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1 5 10 15  
Glu Ala Val Arg Leu Phe Ile Glu Phe Leu Lys Asn Gly Gly Pro Ser  
20 25 30

<210> 42  
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<220>  
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<220>  
<223> May be c-term amidated

<400> 42  
His Gly Glu Gly Thr Phe Thr Ser Asp Leu Ser Lys Gln Met Glu Glu  
1 5 10 15  
Glu Ala Val Arg Leu Phe Ile Glu Trp Leu Lys Asn Gly Gly Pro  
20 25 30

<210> 43  
<211> 31  
<212> PRT  
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<220>  
<223> Description of Artificial Sequence: Synthetic peptide

<220>  
<223> May be c-term amidated

<400> 43  
His Gly Glu Gly Thr Phe Thr Ser Asp Leu Ser Lys Gln Leu Glu Glu

1 5 10 15  
Glu Ala Val Arg Leu Phe Ile Glu Phe Leu Lys Asn Gly Gly Pro  
20 25 30

<210> 44  
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<212> PRT  
<213> Artificial Sequence

<220>  
<223> Description of Artificial Sequence: Synthetic peptide

<220>  
<223> May be c-term amidated

<400> 44  
His Gly Glu Gly Thr Phe Thr Ser Asp Leu Ser Lys Gln Leu Glu Glu  
1 5 10 15

Glu Ala Val Arg Leu Phe Ile Glu Phe Leu Lys Asn Gly Gly  
20 25 30

<210> 45  
<211> 29  
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<220>  
<223> May be c-term amidated

<400> 45  
His Gly Glu Gly Thr Phe Thr Ser Asp Leu Ser Lys Gln Met Glu Glu  
1 5 10 15

Glu Ala Val Arg Leu Phe Ile Glu Trp Leu Lys Asn Gly  
20 25

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<220>

<223> May be c-term amidated

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His Gly Glu Gly Thr Phe Thr Ser Asp Leu Ser Lys Gln Leu Glu Glu  
1 5 10 15

Glu Ala Val Arg Leu Phe Ile Glu Phe Leu Lys Asn Gly  
20 25

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<222> (31)

<223> thioproline

<220>

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<223> thioproline

<220>

<223> May be c-term amidated

<400> 47

His Gly Glu Gly Thr Phe Thr Ser Asp Leu Ser Lys Gln Met Glu Glu  
1 5 10 15

Glu Ala Val Arg Leu Phe Ile Glu Trp Leu Lys Asn Gly Gly Xaa Ser  
20 25 30

Ser Gly Ala Xaa Xaa Xaa  
35

<210> 48

<211> 38

<212> PRT

<213> Artificial Sequence

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<223> Description of Artificial Sequence: Synthetic peptide

<220>

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<222> (36)..(38)

<223> thioproline

<220>

<223> May be c-term amidated

<400> 48

His Gly Glu Gly Thr Phe Thr Ser Asp Leu Ser Lys Gln Met Glu Glu  
1 5 10 15

Glu Ala Val Arg Leu Phe Ile Glu Trp Leu Lys Asn Gly Gly Pro Ser  
20 25 30

Ser Gly Ala Xaa Xaa Xaa  
35

<210> 49

<211> 37

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<222> (31)

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<220>

<223> May be c-term amidated

<400> 49

His Gly Glu Gly Thr Phe Thr Ser Asp Leu Ser Lys Gln Met Glu Glu  
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Glu Ala Val Arg Leu Phe Ile Glu Trp Leu Lys Asn Gly Gly Xaa Ser  
20 25 30

Ser Gly Ala Pro Pro  
35

<210> 50

<211> 37

<212> PRT

<213> Artificial Sequence

<220>

<223> Description of Artificial Sequence: Synthetic peptide

<220>

<221> MOD\_RES

<222> (31)  
<223> N-methylalanine

<220>  
<221> MOD\_RES  
<222> (36)..(37)  
<223> N-methylalanine

<220>  
<223> May be c-term amidated

<400> 50  
His Gly Glu Gly Thr Phe Thr Ser Asp Leu Ser Lys Gln Met Glu Glu  
1 5 10 15  
Glu Ala Val Arg Leu Phe Ile Glu Trp Leu Lys Asn Gly Gly Xaa Ser  
20 25 30  
Ser Gly Ala Xaa Xaa  
35

<210> 51  
<211> 37  
<212> PRT  
<213> Artificial Sequence

<220>  
<223> Description of Artificial Sequence: Synthetic peptide

<220>  
<221> MOD\_RES  
<222> (31)  
<223> homoproline

<220>  
<221> MOD\_RES  
<222> (36)..(37)  
<223> homoproline

<220>  
<223> May be c-term amidated

<400> 51  
His Gly Glu Gly Thr Phe Thr Ser Asp Leu Ser Lys Gln Met Glu Glu  
1 5 10 15  
Glu Ala Val Arg Leu Phe Ile Glu Trp Leu Lys Asn Gly Gly Xaa Ser  
20 25 30  
Ser Gly Ala Xaa Xaa  
35



<210> 52  
<211> 36  
<212> PRT  
<213> Artificial Sequence

<220>  
<223> Description of Artificial Sequence: Synthetic peptide

<220>  
<221> MOD\_RES  
<222> (31)  
<223> homoproline

<220>  
<221> MOD\_RES  
<222> (36)  
<223> homoproline

<220>  
<223> May be c-term amidated

<400> 52  
His Gly Glu Gly Thr Phe Thr Ser Asp Leu Ser Lys Gln Met Glu Glu  
1 5 10 15  
Glu Ala Val Arg Leu Phe Ile Glu Trp Leu Lys Asn Gly Gly Xaa Ser  
20 25 30  
Ser Gly Ala Xaa  
35

<210> 53  
<211> 35  
<212> PRT  
<213> Artificial Sequence

<220>  
<223> Description of Artificial Sequence: Synthetic peptide

<220>  
<223> May be c-term amidated

<400> 53  
Arg Gly Glu Gly Thr Phe Thr Ser Asp Leu Ser Lys Gln Met Glu Glu  
1 5 10 15  
Glu Ala Val Arg Leu Phe Ile Glu Trp Leu Lys Asn Gly Gly Pro Ser  
20 25 30  
Ser Gly Ala  
35

<210> 54  
<211> 30  
<212> PRT  
<213> Artificial Sequence

<220>  
<223> Description of Artificial Sequence: Synthetic peptide

<220>  
<223> May be c-term amidated

<400> 54  
His Gly Asp Gly Thr Phe Thr Ser Asp Leu Ser Lys Gln Met Glu Glu  
1 5 10 15  
Glu Ala Val Arg Leu Phe Ile Glu Trp Leu Lys Asn Gly Gly  
20 25 30

<210> 55  
<211> 28  
<212> PRT  
<213> Artificial Sequence

<220>  
<223> Description of Artificial Sequence: Synthetic peptide

<220>  
<221> MOD\_RES  
<222> (6)  
<223> naphthylalanine

<220>  
<223> May be c-term amidated

<400> 55  
His Gly Glu Gly Thr Xaa Thr Ser Asp Leu Ser Lys Gln Leu Glu Glu  
1 5 10 15  
Glu Ala Val Arg Leu Phe Ile Glu Phe Leu Lys Asn  
20 25

<210> 56  
<211> 28  
<212> PRT  
<213> Artificial Sequence

<220>  
<223> Description of Artificial Sequence: Synthetic peptide

<220>

<223> May be c-term amidated

<400> 56

His Gly Glu Gly Thr Phe Ser Ser Asp Leu Ser Lys Gln Met Glu Glu  
1 5 10 15

Glu Ala Val Arg Leu Phe Ile Glu Trp Leu Lys Asn  
20 25

<210> 57

<211> 28

<212> PRT

<213> Artificial Sequence

<220>

<223> Description of Artificial Sequence: Synthetic peptide

<220>

<223> May be c-term amidated

<400> 57

His Gly Glu Gly Thr Phe Ser Thr Asp Leu Ser Lys Gln Met Glu Glu  
1 5 10 15

Glu Ala Val Arg Leu Phe Ile Glu Trp Leu Lys Asn  
20 25

<210> 58

<211> 28

<212> PRT

<213> Artificial Sequence

<220>

<223> Description of Artificial Sequence: Synthetic peptide

<220>

<223> May be c-term amidated

<400> 58

His Gly Glu Gly Thr Phe Thr Ser Glu Leu Ser Lys Gln Met Ala Glu  
1 5 10 15

Glu Ala Val Arg Leu Phe Ile Glu Trp Leu Lys Asn  
20 25

<210> 59

<211> 28

<212> PRT

<213> Artificial Sequence

<220>

<223> Description of Artificial Sequence: Synthetic peptide

<220>

<221> MOD\_RES

<222> (10)

<223> pentylglycine

<220>

<223> May be c-term amidated

<400> 59

His Gly Glu Gly Thr Phe Thr Ser Asp Xaa Ser Lys Gln Leu Glu Glu  
1 5 10 15

Glu Ala Val Arg Leu Phe Ile Glu Phe Leu Lys Asn  
20 25

<210> 60

<211> 28

<212> PRT

<213> Artificial Sequence

<220>

<223> Description of Artificial Sequence: Synthetic peptide

<220>

<221> MOD\_RES

<222> (22)

<223> naphthylalanine

<220>

<223> May be c-term amidated

<400> 60

His Gly Glu Gly Thr Phe Thr Ser Asp Leu Ser Lys Gln Leu Glu Glu  
1 5 10 15

Glu Ala Val Arg Leu Xaa Ile Glu Phe Leu Lys Asn  
20 25

<210> 61

<211> 28

<212> PRT

<213> Artificial Sequence

<220>

<223> Description of Artificial Sequence: Synthetic peptide

<220>

<221> MOD\_RES

<222> (23)

<223> tertiary-butylglycine

<220>

<223> May be c-term amidated

<400> 61

His Gly Glu Gly Thr Phe Thr Ser Asp Leu Ser Lys Gln Met Glu Glu  
1 5 10 15

Glu Ala Val Arg Leu Phe Xaa Glu Trp Leu Lys Asn  
20 25

<210> 62

<211> 28

<212> PRT

<213> Artificial Sequence

<220>

<223> Description of Artificial Sequence: Synthetic peptide

<220>

<223> May be c-term amidated

<400> 62

His Gly Glu Gly Thr Phe Thr Ser Asp Leu Ser Lys Gln Leu Glu Glu  
1 5 10 15

Glu Ala Val Arg Leu Phe Ile Asp Phe Leu Lys Asn  
20 25

<210> 63

<211> 33

<212> PRT

<213> Artificial Sequence

<220>

<223> Description of Artificial Sequence: Synthetic peptide

<220>

<223> May be c-term amidated

<400> 63

His Gly Glu Gly Thr Phe Thr Ser Asp Ala Ser Lys Gln Leu Glu Glu  
1 5 10 15

Glu Ala Val Arg Leu Phe Ile Glu Phe Leu Lys Asn Gly Gly Pro Ser  
20 25 30

Ser

<210> 64  
<211> 29  
<212> PRT  
<213> Artificial Sequence

<220>  
<223> Description of Artificial Sequence: Synthetic peptide  
  
<220>  
<223> May be c-term amidated

<400> 64  
His Gly Glu Gly Thr Phe Thr Ser Asp Ala Ser Lys Gln Met Glu Glu  
1 5 10 15  
  
Glu Ala Val Arg Leu Phe Ile Glu Trp Leu Lys Asn Gly  
20 25

<210> 65  
<211> 37  
<212> PRT  
<213> Artificial Sequence

<220>  
<223> Description of Artificial Sequence: Synthetic peptide  
  
<220>  
<221> MOD\_RES  
<222> (31)  
<223> homoproline

<220>  
<221> MOD\_RES  
<222> (36)..(37)  
<223> homoproline

<220>  
<223> May be c-term amidated

<400> 65  
His Gly Glu Gly Thr Phe Thr Ser Asp Ala Ser Lys Gln Met Glu Glu  
1 5 10 15  
  
Glu Ala Val Arg Leu Phe Ile Glu Trp Leu Lys Asn Gly Gly Xaa Ser  
20 25 30

Ser Gly Ala Xaa Xaa  
35

<210> 66  
<211> 40  
<212> PRT  
<213> Artificial Sequence

<220>  
<223> Description of Artificial Sequence: Synthetic peptide

<220>  
<221> MOD\_RES  
<222> (1)  
<223> His, Arg, Tyr, or 4-imidazopropionyl

<220>  
<221> MOD\_RES  
<222> (2)  
<223> Ser, Gly, Ala, or Thr

<220>  
<221> MOD\_RES  
<222> (3)  
<223> Ala, Asp, or Glu

<220>  
<221> MOD\_RES  
<222> (5)  
<223> Ala or Thr

<220>  
<221> MOD\_RES  
<222> (6)  
<223> Ala, Phe, Tyr, or naphthylalanine

<220>  
<221> MOD\_RES  
<222> (7)  
<223> Thr or Ser

<220>  
<221> MOD\_RES  
<222> (8)  
<223> Ala, Ser, or Thr

<220>  
<221> MOD\_RES  
<222> (9)  
<223> Asp or Glu

<220>  
<221> MOD\_RES  
<222> (10)  
<223> Ala, Leu, Ile, Val, pentylglycine, or Met

<220>  
<221> MOD\_RES  
<222> (11)  
<223> Ala or Ser

<220>  
<221> MOD\_RES  
<222> (12)  
<223> Ala or Lys

<220>  
<221> MOD\_RES  
<222> (13)  
<223> Ala or Gln

<220>  
<221> MOD\_RES  
<222> (14)  
<223> Ala, Leu, Ile, pentylglycine, Val, or Met

<220>  
<221> MOD\_RES  
<222> (15)  
<223> Ala or Glu

<220>  
<221> MOD\_RES  
<222> (16)  
<223> Ala or Glu

<220>  
<221> MOD\_RES  
<222> (17)  
<223> Ala or Glu

<220>  
<221> MOD\_RES  
<222> (19)  
<223> Ala or Val

<220>  
<221> MOD\_RES  
<222> (20)  
<223> Ala or Arg

<220>  
<221> MOD\_RES  
<222> (21)  
<223> Ala, Leu, or Lys-NH

<220>  
<221> MOD\_RES



<222> (22)  
<223> Lys, Arg, or not present

<220>  
<221> MOD\_RES  
<222> (23)  
<223> Phe, Tyr, or naphthylalanine

<220>  
<221> MOD\_RES  
<222> (24)  
<223> Ile, Val, Leu, pentylglycine, tert-butylglycine,  
or Met

<220>  
<221> MOD\_RES  
<222> (25)  
<223> Ala, Glu, or Asp

<220>  
<221> MOD\_RES  
<222> (26)  
<223> Ala, Trp, Phe, Tyr, or naphthylalanine

<220>  
<221> MOD\_RES  
<222> (27)  
<223> Ala or Leu

<220>  
<221> MOD\_RES  
<222> (28)  
<223> Lys, Asn, Lys-NH, or Ala

<220>  
<221> MOD\_RES  
<222> (29)  
<223> Asn, Lys, Arg, or Lys-NH

<220>  
<221> MOD\_RES  
<222> (30)  
<223> Asn, Lys, Arg, Ala, or not present

<220>  
<221> MOD\_RES  
<222> (31)  
<223> Gly or not present

<220>  
<221> MOD\_RES  
<222> (32)  
<223> Gly or not present

<220>  
<221> MOD\_RES  
<222> (33)  
<223> Pro, homoproline, 3Hyp, 4Hyp, thioproline,  
N-alkylglycine, N-alkylpentylglycine,  
N-alkylalanine, or not present

<220>  
<221> MOD\_RES  
<222> (34)  
<223> Ser or not present

<220>  
<221> MOD\_RES  
<222> (35)  
<223> Ser or not present

<220>  
<221> MOD\_RES  
<222> (36)  
<223> Gly or not present

<220>  
<221> MOD\_RES  
<222> (37)  
<223> Ala or not present

<220>  
<221> MOD\_RES  
<222> (38)  
<223> Pro, homoproline, 3Hyp, 4Hyp, thioproline,  
N-alkylglycine, N-alkylpentylglycine,  
N-alkylalanine, or not present

<220>  
<221> MOD\_RES  
<222> (39)  
<223> Pro, homoproline, 3Hyp, 4Hyp, thioproline,  
N-alkylglycine, N-alkylpentylglycine,  
N-alkylalanine, or not present

<220>  
<221> MOD\_RES  
<222> (40)  
<223> Pro, homoproline, 3Hyp, 4Hyp, thioproline,  
N-alkylglycine, N-alkylpentylglycine,  
N-alkylalanine, or not present

<220>  
<223> May be c-term amidated

<400> 66

Xaa Xaa Xaa Gly Xaa Xaa Xaa Xaa Xaa Xaa Xaa Xaa Xaa Xaa Xaa Xaa  
 1 5 10 15  
 Xaa Ala Xaa Xaa Xaa Xaa Xaa Xaa Xaa Xaa Xaa Xaa Xaa Xaa Xaa Xaa Xaa  
 20 25 30  
 Xaa Xaa Xaa Xaa Xaa Xaa Xaa Xaa  
 35 40

<210> 67  
 <211> 27  
 <212> PRT  
 <213> Artificial Sequence

<220>  
 <223> Description of Artificial Sequence: Synthetic peptide

<220>  
 <221> MOD\_RES  
 <222> (1)  
 <223> 4-imidazolylpropionyl-Gly

<220>  
 <221> MOD\_RES  
 <222> (26)  
 <223> Lys-NH-octanoyl

<220>  
 <223> May be c-term amidated

<400> 67  
 Xaa Glu Gly Thr Phe Thr Ser Asp Leu Ser Lys Gln Met Glu Glu  
 1 5 10 15  
 Glu Ala Val Arg Leu Phe Ile Glu Trp Leu Xaa Asn  
 20 25

<210> 68  
 <211> 27  
 <212> PRT  
 <213> Artificial Sequence

<220>  
 <223> Description of Artificial Sequence: Synthetic peptide

<220>  
 <221> MOD\_RES  
 <222> (1)  
 <223> 4-imidazolylpropionyl-Gly

<220>

<221> MOD\_RES

<222> (26)

<223> Lys-NH-octanoyl

<220>

<223> May be c-term amidated

<400> 68

Xaa Glu Gly Thr Phe Thr Ser Asp Leu Ser Lys Gln Leu Glu Glu  
1 5 10 15

Glu Ala Val Arg Leu Phe Ile Glu Phe Leu Xaa Asn  
20 25

<210> 69

<211> 29

<212> PRT

<213> Artificial Sequence

<220>

<223> Description of Artificial Sequence: Synthetic peptide

<220>

<221> MOD\_RES

<222> (1)

<223> 4-imidazolylpropionyl-Gly

<220>

<221> MOD\_RES

<222> (26)

<223> Lys-NH-octanoyl

<220>

<223> May be c-term amidated

<400> 69

Xaa Glu Gly Thr Phe Thr Ser Asp Leu Ser Lys Gln Met Glu Glu  
1 5 10 15

Glu Ala Val Arg Leu Phe Ile Glu Trp Leu Xaa Asn Gly Gly  
20 25

<210> 70

<211> 29

<212> PRT

<213> Artificial Sequence

<220>

<223> Description of Artificial Sequence: Synthetic peptide

<220>

<221> MOD\_RES  
<222> (1)  
<223> 4-imidazolylpropionyl-Gly

<220>  
<221> MOD\_RES  
<222> (26)  
<223> Lys-NH-octanoyl

<220>  
<223> May be c-term amidated

<400> 70  
Xaa Glu Gly Thr Phe Thr Ser Asp Leu Ser Lys Gln Leu Glu Glu  
1 5 10 15

Glu Ala Val Arg Leu Phe Ile Glu Phe Leu Xaa Asn Gly Gly  
20 25

<210> 71  
<211> 27  
<212> PRT  
<213> Artificial Sequence

<220>  
<223> Description of Artificial Sequence: Synthetic peptide

<220>  
<221> MOD\_RES  
<222> (1)  
<223> 4-imidazolylpropionyl-Gly

<220>  
<221> MOD\_RES  
<222> (27)  
<223> Lys-NH-octanoyl

<220>  
<223> May be c-term amidated

<400> 71  
Xaa Glu Gly Thr Phe Thr Ser Asp Leu Ser Lys Gln Met Glu Glu  
1 5 10 15

Glu Ala Val Arg Leu Phe Ile Glu Trp Leu Asn Xaa  
20 25

<210> 72  
<211> 27  
<212> PRT  
<213> Artificial Sequence

<220>  
<223> Description of Artificial Sequence: Synthetic peptide

<220>  
<221> MOD\_RES  
<222> (1)  
<223> 4-imidazolylpropionyl-Gly

<220>  
<221> MOD\_RES  
<222> (27)  
<223> Lys-NH-octanoyl

<220>  
<223> May be c-term amidated

<400> 72  
Xaa Glu Gly Thr Phe Thr Ser Asp Leu Ser Lys Gln Leu Glu Glu  
1 5 10 15

Glu Ala Val Arg Leu Phe Ile Glu Phe Leu Asn Xaa  
20 25

<210> 73  
<211> 29  
<212> PRT  
<213> Artificial Sequence

<220>  
<223> Description of Artificial Sequence: Synthetic peptide

<220>  
<221> MOD\_RES  
<222> (1)  
<223> 4-imidazolylpropionyl-Gly

<220>  
<221> MOD\_RES  
<222> (27)  
<223> Lys-NH-octanoyl

<220>  
<223> May be c-term amidated

<400> 73  
Xaa Glu Gly Thr Phe Thr Ser Asp Leu Ser Lys Gln Met Glu Glu  
1 5 10 15

Glu Ala Val Arg Leu Phe Ile Glu Trp Leu Asn Xaa Gly Gly  
20 25

<210> 74  
<211> 29  
<212> PRT  
<213> Artificial Sequence

<220>  
<223> Description of Artificial Sequence: Synthetic peptide

<220>  
<221> MOD\_RES  
<222> (1)  
<223> 4-imidazolylpropionyl-Gly

<220>  
<221> MOD\_RES  
<222> (27)  
<223> Lys-NH-octanoyl

<220>  
<223> May be c-term amidated

<400> 74  
Xaa Glu Gly Thr Phe Thr Ser Asp Leu Ser Lys Gln Leu Glu Glu  
1 5 10 15

Glu Ala Val Arg Leu Phe Ile Glu Phe Leu Asn Xaa Gly Gly  
20 25

<210> 75  
<211> 5  
<212> PRT  
<213> Artificial Sequence

<220>  
<221> MOD\_RES  
<222> (3)  
<223> Pro, homoproline, 3Hyp, 4Hyp, thioproline,  
N-Alkylglycine, N-alkylpentylglycine,  
or N-alklalanine

<220>  
<223> May be c-term amidated

<400> 75  
Gly Gly Xaa Ser Ser  
1 5

<210> 76  
<211> 6

<212> PRT  
<213> Artificial Sequence

<220>  
<223> Description of Artificial Sequence: Synthetic  
peptide

<220>  
<221> MOD\_RES  
<222> (3)  
<223> Pro, homoproline, 3Hyp, 4Hyp, thioproline,  
N-Alkylglycine, N-alkylpentylglycine,  
or N-alklalanine

<220>  
<223> May be c-term amidated

<400> 76  
Gly Gly Xaa Ser Ser Gly  
1 5

<210> 77  
<211> 7  
<212> PRT  
<213> Artificial Sequence

<220>  
<223> Description of Artificial Sequence: Synthetic  
peptide

<220>  
<221> MOD\_RES  
<222> (3)  
<223> Pro, homoproline, 3Hyp, 4Hyp, thioproline,  
N-Alkylglycine, N-alkylpentylglycine,  
or N-alklalanine

<220>  
<223> May be c-term amidated

<400> 77  
Gly Gly Xaa Ser Ser Gly Ala  
1 5

<210> 78  
<211> 8  
<212> PRT  
<213> Artificial Sequence

<220>  
<223> Description of Artificial Sequence: Synthetic



peptide

<220>

<221> MOD\_RES

<222> (3)

<223> Pro, homoproline, 3Hyp, 4Hyp, thioproline,  
N-Alkylglycine, N-alkylpentylglycine,  
or N-alklalanine

<220>

<221> MOD\_RES

<222> (8)

<223> Pro, homoproline, 3Hyp, 4Hyp, thioproline,  
N-alkylglycine, N-alkylpentylglycine,  
or N-alkylalanine

<220>

<223> May be c-term amidated

<400> 78

Gly Gly Xaa Ser Ser Gly Ala Xaa

1

5

<210> 79

<211> 9

<212> PRT

<213> Artificial Sequence

<220>

<223> Description of Artificial Sequence: Synthetic  
peptide

<220>

<221> MOD\_RES

<222> (3)

<223> Pro, homoproline, 3Hyp, 4Hyp, thioproline,  
N-Alkylglycine, N-alkylpentylglycine,  
or N-alklalanine

<220>

<221> MOD\_RES

<222> (8)

<223> Pro, homoproline, 3Hyp, 4Hyp, thioproline,  
N-alkylglycine, N-alkylpentylglycine,  
or N-alkylalanine

<220>

<221> MOD\_RES

<222> (9)

<223> Pro, homoproline, 3Hyp, 4Hyp, thioproline,  
N-alkylglycine, N-alkylpentylglycine,  
or N-alkylalanine

<220>

<223> May be c-term amidated

<400> 79

Gly Gly Xaa Ser Ser Gly Ala Xaa Xaa  
1 5

<210> 80

<211> 10

<212> PRT

<213> Artificial Sequence

<220>

<223> Description of Artificial Sequence: Synthetic peptide

<220>

<221> MOD\_RES

<222> (3)

<223> Pro, homoproline, 3Hyp, 4Hyp, thioproline,  
N-alkylglycine, N-alkylpentylglycine,  
or N-alkylalanine

<220>

<221> MOD\_RES

<222> (8)

<223> Pro, homoproline, 3Hyp, 4Hyp, thioproline,  
N-alkylglycine, N-alkylpentylglycine,  
or N-alkylalanine

<220>

<221> MOD\_RES

<222> (9)

<223> Pro, homoproline, 3Hyp, 4Hyp, thioproline,  
N-alkylglycine, N-alkylpentylglycine,  
or N-alkylalanine

<220>

<221> MOD\_RES

<222> (10)

<223> Pro, homoproline, 3Hyp, 4Hyp, thioproline,  
N-alkylglycine, N-alkylpentylglycine,  
or N-alkylalanine

<220>

<223> May be c-term amidated

<400> 80

Gly Gly Xaa Ser Ser Gly Ala Xaa Xaa Xaa  
1 5 10

<210> 81  
<211> 5  
<212> PRT  
<213> Artificial Sequence

<220>  
<221> MOD\_RES  
<222> (3)  
<223> Pro, homoproline, thioproline,  
or N-methylalanine

<220>  
<223> May be c-term amidated

<400> 81  
Gly Gly Xaa Ser Ser  
1 5

<210> 82  
<211> 6  
<212> PRT  
<213> Artificial Sequence

<220>  
<223> Description of Artificial Sequence: Synthetic  
peptide

<220>  
<221> MOD\_RES  
<222> (3)  
<223> Pro, homoproline, thioproline,  
or N-methylalanine

<220>  
<223> May be c-term amidated

<400> 82  
Gly Gly Xaa Ser Ser Gly  
1 5

<210> 83  
<211> 7  
<212> PRT  
<213> Artificial Sequence

<220>  
<223> Description of Artificial Sequence: Synthetic  
peptide

<220>  
<221> MOD\_RES

<222> (3)  
<223> Pro, homoproline, thioproline,  
or N-methylalanine

<220>  
<223> May be c-term amidated

<400> 83  
Gly Gly Xaa Ser Ser Gly Ala  
1 5

<210> 84  
<211> 8  
<212> PRT  
<213> Artificial Sequence

<220>  
<223> Description of Artificial Sequence: Synthetic  
peptide

<220>  
<221> MOD\_RES  
<222> (3)  
<223> Pro, homoproline, thioproline,  
or N-methylalanine

<220>  
<221> MOD\_RES  
<222> (8)  
<223> Pro, homoproline, thioproline,  
or N-methylalanine

<220>  
<223> May be c-term amidated

<400> 84  
Gly Gly Xaa Ser Ser Gly Ala Xaa  
1 5

<210> 85  
<211> 9  
<212> PRT  
<213> Artificial Sequence

<220>  
<223> Description of Artificial Sequence: Synthetic  
peptide

<220>  
<221> MOD\_RES  
<222> (3)

<223> Pro, homoproline, thioproline,  
or N-methylalanine

<220>

<221> MOD\_RES

<222> (8)

<223> Pro, homoproline, thioproline,  
or N-methylalanine

<220>

<221> MOD\_RES

<222> (9)

<223> Pro, homoproline, thioproline,  
or N-methylalanine

<220>

<223> May be c-term amidated

<400> 85

Gly Gly Xaa Ser Ser Gly Ala Xaa Xaa  
1 5

<210> 86

<211> 10

<212> PRT

<213> Artificial Sequence

<220>

<223> Description of Artificial Sequence: Synthetic peptide

<220>

<221> MOD\_RES

<222> (3)

<223> Pro, homoproline, thioproline,  
or N-methylalanine

<220>

<221> MOD\_RES

<222> (8)

<223> Pro, homoproline, thioproline,  
or N-methylalanine

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or N-methylalanine

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<400> 86

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or Met

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or N-methylalanine, or not present

<220>  
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<400> 87  
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Xaa Ala Xaa Xaa Xaa Xaa Xaa Xaa Xaa Xaa Xaa Xaa Xaa Xaa Xaa Xaa  
20 25 30

Xaa Xaa Xaa Xaa Xaa Xaa  
35